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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/602,589      | 06/25/2003  | Tien-Yuan Chien      | YUN 189             | 1450             |

7590 02/09/2006

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EXAMINER

SHAPIRO, JEFFERY A

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3653

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                       |                                     |  |
|------------------------------|---------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/602,589  | <b>Applicant(s)</b><br>CHIEN ET AL. |  |
|                              | <b>Examiner</b><br>Jeffrey A. Shapiro | <b>Art Unit</b><br>3653             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laskowski et al (US 6,101,266) in view of Kobayashi et al (US 5,512,758).

Laskowski discloses an insertion slot (14), a conveying/banknote holding down mechanism (12), a banknote verification assembly (10), a transmitter and receiver holder base with banknote passage (see figures 2 and 3) with optical transmitters (32) and optical receivers (20 and 22), one of said optical receivers (22) being on an opposite side of the banknote passage than the transmitter, controller (128) and communication interface module (132), as described in col. 21, lines 60-65. Note that it would have been obvious that Laskowski's apparatus would be used in a housing with a money box to hold the validated bills.

Laskowski does not expressly disclose, but Kobayashi et al discloses an ultra-violet (UV) detector (3 and 20) located on one side of a bill passage and a UV emitter located on an opposite side of the bill passage so as to detect fluorescence from a passing bill. See Kobayashi, figure 12 and col. 17, line 19-col. 18, line 18.

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At the time of the invention, it would have been obvious to one of ordinary skill to use Kobayashi's UV detector/emitter device with the detector and emitter located on opposite sides of a bill passage, in Laskowski's bill verification assembly.

The suggestion/motivation for doing so would have been to detect excitation UV light propagating through the passing bill, therefore providing data for determining the thickness and material dirtiness of the bill. See Kobayashi, col. 18, lines 6-14. See also Kobayashi col. 2, line 49-col. 3, line 4 which states that such a UV detector/emitter device is more compact, vibration-proof and provides for more accurate bill authentication.

Note also Laskowski, col. 6, lines 35-46 in which it is stated that "other types of wavelengths of emitters may be used." Note also that ultraviolet light is routinely used to the genuineness of bills. See col. 1, lines 26-33 of Kobayashi.

Further note that it would have been obvious that electric power is used to run Laskowski's optical transmitter and optical receiver modules.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Mennie et al (US 6,731,785 B1) in view of Kobayashi et al (US 5,512,758).

Mennie discloses a housing (see figure 3b), an insertion slot (14), a conveying/banknote holding down mechanism (12), a money box (214a-f), a banknote verification assembly (70 and 581), a transmitter (342) and receiver holder base (300) with banknote passage (see figure 5b) with ultraviolet optical transmitter (342) and optical receiver (340), controller (1712) (see figure 17), communications interface (32). Further regarding Claim 3, see col. 5, lines 18-33 and note also figure 17, which illustrates a digital-to-analog converter and analog-to-digital-converter, both of which can be construed as communications interfaces.

Mennie does not expressly disclose, but Kobayashi et al discloses an ultra-violet (UV) detector (3 and 20) located on one side of a bill passage and a UV emitter located on an opposite side of the bill passage so as to detect fluorescence from a passing bill. See Kobayashi, figure 12 and col. 17, line 19-col. 18, line 18.

At the time of the invention, it would have been obvious to one of ordinary skill to use Kobayashi's UV detector/emitter device with the detector and emitter located on opposite sides of a bill passage, in Mennie's bill verification assembly.

The suggestion/motivation for doing so would have been to detect excitation UV light propagating through the passing bill, therefore providing data for determining the thickness and material dirtiness of the bill. See Kobayashi, col. 18, lines 6-14. See also Kobayashi col. 2, line 49-col. 3, line 4 which states that such a UV detector/emitter

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device is more compact, vibration-proof and provides for more accurate bill authentication.

Regarding Claim 4, note that it would have been obvious that electric power is used to run Laskowski's optical transmitter and optical receiver modules.

4. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mennie in view of Kobayashi, and further in view of Sawtell (US 5,949,225).

Mennie discloses the banknote authenticating apparatus described above. Mennie does not expressly disclose, but Sawtell discloses an optical transmitter module (200) which drives LED (208) coupled to an npn transistor (232) collector terminal and a resistor (242) connected to both the transistor emitter and a grounding loop. The base of the transistor is connected to the output of opamp (220), which can be construed to be a control unit. See Sawtell, fig. 2.

Sawtell further discloses an optical receiver module (306) with shunt resistor (342) connected to both the transistor (310) emitter terminal and the control unit, construed as opamp input (338), and the opposite resistor end being connected to a ground loop. See Sawtell, figure 3.

Both Mennie and Sawtell are considered analogous art because they both concern optoelectronic emitter and receiver circuits.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to have used the ultraviolet transmitter module circuitry (200) and ultraviolet

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receiver module circuitry (306) to fluoresce notes passing through Mennie's banknote processing system.

The suggestion/motivation for using Sawtell's transmitter module circuitry (200) would have been to produce a gain independently controllable from that of the optocoupler. See Sawtell col. 5, lines 64-67.

The suggestion/motivation for using Sawtell's receiver module circuitry (306) would have been that this receiver module is a typical phototransistor circuit as is well-known in the art, to sense ultraviolet light.

In the alternative, note that it would have been obvious to one ordinarily skilled in the art to have used Sawtell's entire feedback circuit (300), including transmitter/drive circuit (304), optocoupler (302), and receiver module circuitry (306) in Mennie's apparatus.

The suggestion/motivation would have been to use an ultraviolet emitting/detection module with an LED drive circuit that is "adjustable independently of the optocoupler" and that "compensates for the inherent and operational fluctuations in the gain of the optocoupler."

Note also that feedback circuit (300) is considered at the very least, a functional equivalent of Applicant's feedback circuit described in claims 5 and 6.

### ***Response to Arguments***

5. Applicant's arguments with respect to Claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

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Applicant asserts that Laskowski does not teach using UV emitters and detectors. Although it can be argued that Laskowski teaches and discloses using such UV emitter and detectors because of the mention of using "other wavelengths", Kobayashi clearly discloses and teaches a UV emitter and detector being used in an application where the bill passes between said emitter and said detector.

Mennie does not disclose such a structure, but again, Kobayashi provides teaching and disclosure for using such UV emitter/detector structure in a bill authentication module so as to more accurately verify the genuineness of bills processed.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Csulits '463 is cited as a further disclosure of a UV detector/emitter device, as mentioned by Mennie at col. 14, lines 27-30.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey A. Shapiro whose telephone number is (571)272-6943. The examiner can normally be reached on Monday-Friday, 9:00 AM-5:00 PM.

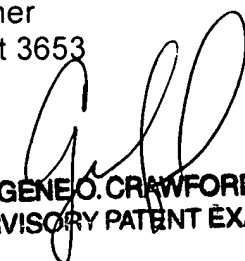
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene O. Crawford can be reached on (571)272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrey A. Shapiro  
Examiner  
Art Unit 3653

February 5, 2006



**GENE O. CRAWFORD**  
**SUPERVISORY PATENT EXAMINER**